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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)
Mikio Onodera et al.)
Serial No. To be Assigned)
Filing Date: Herewith)
For Force Feedback Functioning Manual Input Device)
and Onboard Instrument Control System Having It)

PRELIMINARY AMENDMENT

Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

Prior to examination of the above-identified application, please amend the application as follows:

In the Drawings

Please replace Figure 1 with the corrected Figure 1 enclosed herewith. The correction to the figure has been marked in red. Applicants respectfully request that the Examiner approve the correction. Applicants will submit corrected formal drawings upon receiving a Notice of Allowance.

In the Claims

Please rewrite Claim 1 as follows:

1. (Amended) A manual input device comprising a joystick type knob and a rotary knob that are disposed coaxially, a first actuator to load an external force on the joystick type knob, a second actuator to load an external force on the rotary knob, a first detector to detect an operation state of the joystick type knob, and a second detector to detect an operation state of the rotary knob.

Please rewrite Claim 2 as follows:

2. (Amended) The manual input device according to claim 1, further comprising a guide member to define an operation direction of the joystick type knob.

Please rewrite Claim 3 as follows:

3. (Amended) The manual input device according to claim 1, further comprising a control unit that controls the first actuator based on a signal supplied from the first detector and controls the second actuator based on a signal supplied from the second detector, the control unit provided in a box that houses the manual input device.

Please rewrite Claim 4 as follows:

4. (Amended) The manual input device according to claim 1, further comprising a control unit that controls the first actuator based on a signal supplied from the first detector and controls the second actuator based on a signal supplied from the second detector, the control unit provided in an external apparatus.

Please rewrite Claim 5 as follows:

5. (Amended) An onboard instrument control device comprising:
electric instrument selection switches to select an electric instrument having a function to be controlled; and
a manual input device to control various functions of the electric instrument selected by use of one of the selection switches, the manual input device comprising a joystick type knob and a rotary knob that are disposed coaxially, a first actuator to load an external force on the joystick type knob, a second actuator to load an external force on the rotary knob, a first detector to detect an operation state of the joystick type knob, and second detector to detect an operation state of the rotary knob.

In the Abstract

Please rewrite the Abstract as follows:

(Amended) ABSTRACT OF THE DISCLOSURE

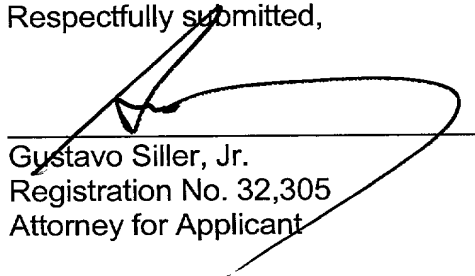
A manual input device is provided with a spherical bearing, a joystick type knob held swingably on the spherical bearing, a rotary knob disposed coaxially with the joystick type knob, a first actuator for loading an external force on the joystick

type knob, a second actuator for loading an external force on the rotary knob, a control unit for controlling these first and second actuators, a guide member for defining an operation direction of the joystick type knob, first detection means for detecting an operation state of the joystick type knob, and second detection means for detecting an operation state of the rotary knob. In an onboard instrument control device, the built-in manual input device is contained in a box and the joystick type knob and the rotary knob and push button switches used for instrument selection are disposed on an upper surface of the box.

REMARKS

Applicant has rewritten Claims 1-5 and the Abstract. The changes from the previous version to the rewritten version are shown in attached Appendix A, with strikethrough for deleted matter and underlines for added matter.

Respectfully submitted,



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APPENDIX A
Force Feedback Functioning Manual Input Device and Onboard
Instrument Control System Having It
Attorney Docket No. 9281-4255
Inventor Mikio Onodera et al.

In the Claims

Please amend Claim 1 as follows:

1. (Amended) A manual input device ~~provided with~~comprising a joystick type knob and a rotary knob that are disposed coaxially, ~~one~~a first actuator ~~for loading to load~~ an external force on the joystick type knob, ~~one~~a second actuator ~~for loading to load~~ an external force on the rotary knob, ~~a first detection means for detecting~~detector to detect an operation state of the joystick type knob, and ~~a second detection means for detecting~~detector to detect an operation state of the rotary knob.

Please amend Claim 2 as follows:

2. (Amended) The manual input device according to claim 1, ~~wherein the manual input device is additionally provided with~~further comprising a guide member ~~for defining to define~~ an operation direction of the joystick type knob.

Please amend Claim 3 as follows:

3. (Amended) The manual input device according to claim 1, ~~wherein~~further comprising a control unit that controls the first actuator based on a signal supplied from the first ~~detection means~~detector and controls the second actuator based on a signal supplied from the second ~~detection means~~is detector, ~~the control unit~~ provided ~~combinedly in a box that constitutes~~houses the manual input device.

Please amend Claim 4 as follows:

4. (Amended) The manual input device according to claim 1, ~~wherein~~further comprising a control unit that controls the first actuator based on a signal supplied from the first ~~detection means~~detector and controls the second actuator based on a signal supplied from the second ~~detection means~~is detector, ~~the control unit~~ provided in an external apparatus.

Please amend Claim 5 as follows:

5. (Amended) An onboard instrument control device ~~having comprising:~~
electric instrument selection switches ~~for selecting~~ to select an electric
instrument ~~the having a function of which is to be controlled;~~ and
a manual input device ~~for controlling~~ to control various functions of the
electric instrument selected by use of one of the selection switches, ~~wherein the~~
onboard instrument control device is provided with the manual input device
~~having comprising~~ a joystick type knob and a rotary knob that are disposed coaxially,
a first actuator ~~for loading~~ to load an external force on the joystick type knob, a
second actuator ~~for loading~~ to load an external force on the rotary knob, a first
~~detection means for detecting~~ detector to detect an operation state of the joystick
type knob, and ~~second detection means for detecting~~ detector to detect an operation
state of the rotary knob.

In the Abstract

Please amend the Abstract as follows:

(Amended) ABSTRACT OF THE DISCLOSURE

~~The invention provides a small-sized and low-cost manual input device~~
~~excellent in operability and multifunctionality, and provides an onboard instrument~~
~~control device having the abovementioned manual input device.~~ A manual input
device is provided with a spherical bearing, a joystick type knob held swingably on
the spherical bearing, a rotary knob disposed coaxially with the joystick type knob, a
first actuator for loading an external force on the joystick type knob, a second
actuator for loading an external force on the rotary knob, a control unit for controlling
these first and second actuators, a guide member for defining an operation direction
of the joystick type knob, first detection means for detecting an operation state of the
joystick type knob, and second detection means for detecting an operation state of
the rotary knob. ~~An~~ In an onboard instrument control device ~~is structured so that,~~ the
built-in manual input device is contained in a box and the joystick type knob and the
rotary knob ~~of the manual input device and push button switches used for instrument~~
selection are disposed on an upper surface of the box.

FIG. 1

